

MICROLAOPHONTE TRISSETOSA SP. NOV., A NEW HARPACTICOID COPEPOD FROM SOUTHERN FLORIDA

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INTRODUCTION

THE copepod described below was isolated by Dr J. D. George (British Museum (Natural History)) from laboratory cultures of the polychaete *Capitellides giardi* Mesnil. Dr J. Fell and Mrs R. Hendrix (University of Miami) originally established the cultures by inoculating agar plates with decomposing mangrove leaves during investigations into the fungi and nematodes of the southern Florida red mangrove forest detrital system. The cultures have been successfully maintained since August 1972 and the culture technique, together with certain aspects of the biology of the new harpacticoid species, is described in detail by George (1976).

The material upon which this study is based was provided by Dr George in July 1975. It was examined both by phase contrast microscopy and by scanning electron microscopy (SEM). Drawings were made with the aid of a camera lucida and from SEM photographs.

DESCRIPTION OF NEW SPECIES

Microlaophonte trisetosa sp. nov.

TYPES. Holotype ♀ registration no. 1975.1255, allotype ♂ registration no. 1975.1256, paratypes registration nos 1975.1257-1267; deposited in the collections of the British Museum (Natural History). Cultures established using material collected near Matheson Hammock, Miami, Florida, U.S.A.

ADULT FEMALE. Body slender, cylindrical, with somites clearly defined (Fig. 1a-c). Cephalothorax about as long as 3 succeeding somites combined, with sensillae around its lateral and posterior margins. Rostrum short, with 2 sensillae. Each thoracic somite with a row of sensillae dorsally and laterally along the posterior margin. Genital double somite subdivided by a continuous dorsal and lateral chitinous strip armed with sensillae, posterior margin of double somite also provided with sensillae except on mid-ventral portion. Antepenultimate somite similarly provided with sensillae; penultimate somite without sensillae but with a continuous ventro-lateral and ventral row of spinules. Anal somite with a sensilla on each side of the operculum and with a row of spinules ventrally and ventro-laterally around the bases of the caudal rami.

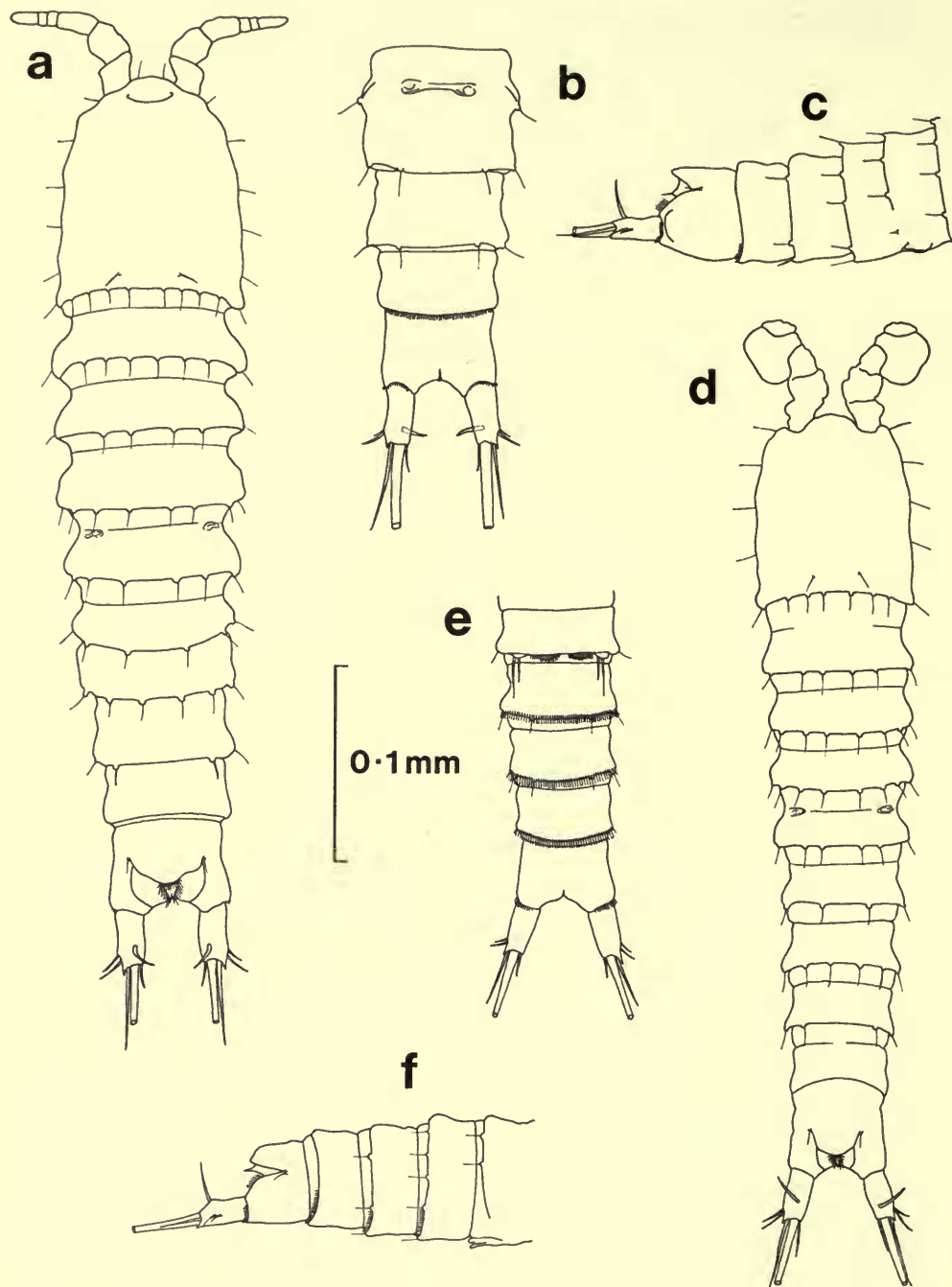


FIG. 1. *Microlaophonte trisetosa* sp. nov.: (a) female, dorsal; (b) abdomen, ventral; (c) abdomen, lateral; (d) male, dorsal; (e) abdomen, ventral; (f) abdomen, lateral.

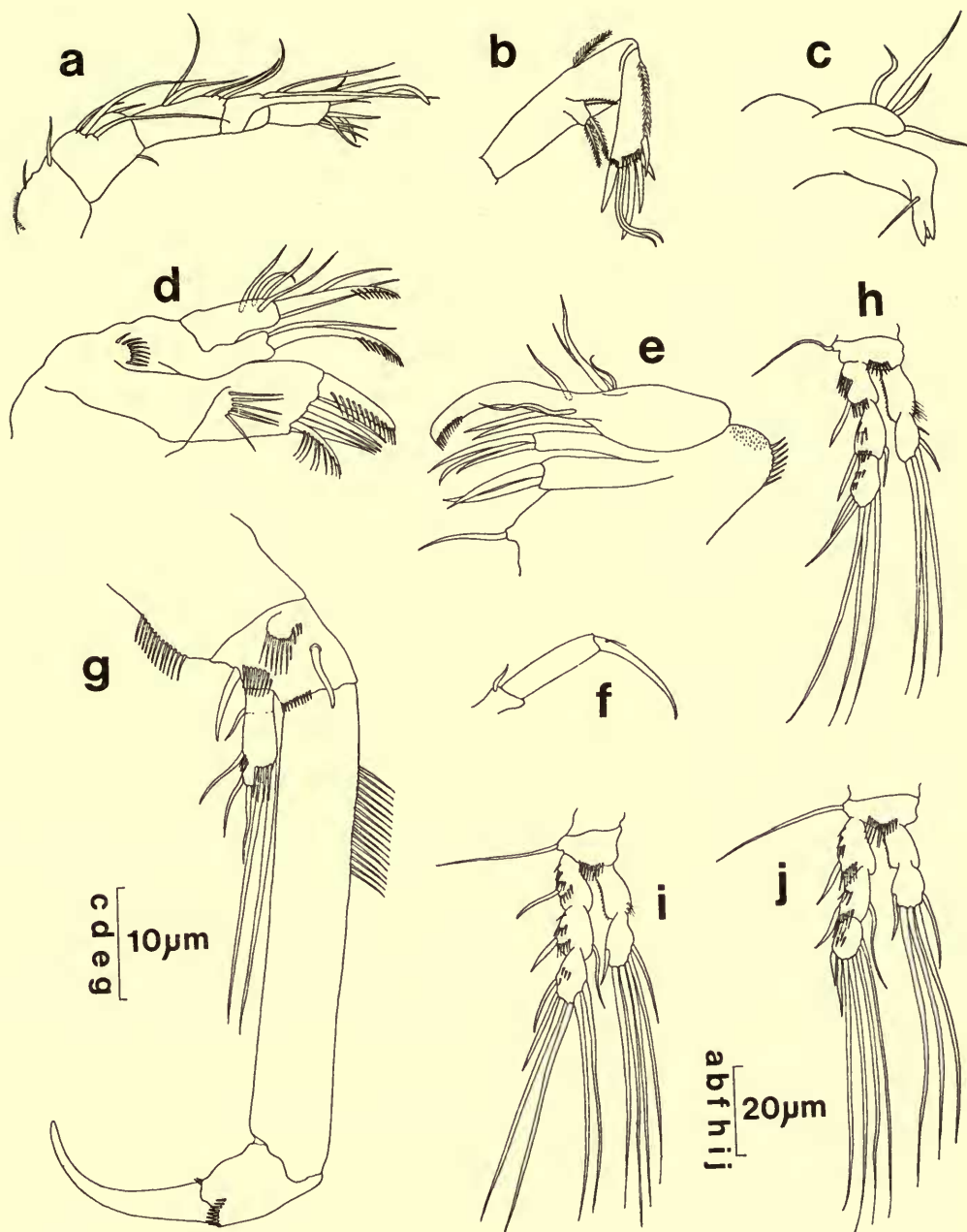


FIG. 2. *Microlaophonte trisetosa* sp. nov.: (a) female first antenna, dorsal; (b) second antenna, ventral; (c) mandible, posterior; (d) first maxilla, posterior; (e) second maxilla, posterior; (f) maxilliped, ventral; (g) leg 1, anterior; (h) leg 2, anterior; (i) leg 3, anterior; (j) leg 4, anterior.

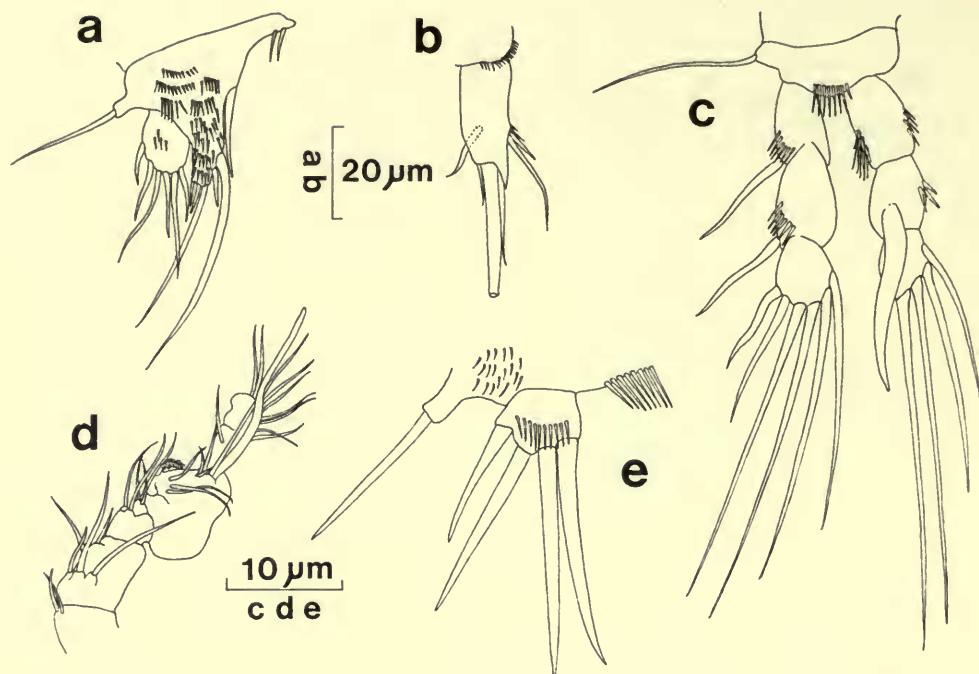


FIG. 3. *Microlaophonte trisetosa* sp. nov.: (a) female leg 5, anterior; (b) caudal ramus, ventral; (c) male leg 3, anterior; (d) first antenna, dorsal; (e) leg 5, ventral.

Caudal rami (Fig. 3b) not markedly divergent, about 2 times longer than broad; with a pointed process at the postero-lateral angle; whole surface with densely scattered minute spinules.

First antenna (Fig. 2a) 6-segmented, third segment longest, about 3 times longer than fourth which carries a long aesthetasc; last segment longer than 2 preceding segments combined.

Second antenna (Fig. 2b). Coxa unarmed; allobasis with a plumose seta on outer margin; exopod small bearing 1 lateral and 2 apical plumose setae. Endopod becoming flattened distally, with a dense covering of spinules and 1 distal spine on anterior margin, 4 strong spines and 2 geniculate setae on the distal margin and 2 spinule rows near apex on ventral surface.

Mandible (Fig. 2c). Praecoxa provided with a bidentate pars incisiva and a strong spine terminally and a slender seta subterminally. Palp 1-segmented with 1 apical and 3 lateral setae.

First maxilla (Fig. 2d). Arthrite of praecoxa with a proximal row of slender spinules and, along the distal margin, 1 very robust spine with spinules, about 5 slender spines and a spinulate seta. Coxa with a proximal row of spinules and 2 terminal setae, 1 spinulate distally; basis with 3 apical setae, 1 strong and distally spinulate; endopod represented by 4 setae.

Second maxilla (Fig. 2e). Syncoxa with 3 endites: proximal endite short with a single seta; middle endite with 2 stout setae; distal endite with 3 setae. A row of

spinules and a patch of minute denticles also present at outer corner of syncoxa. Basis drawn out into a slightly curved claw accompanied by 1 anterior, 1 posterior and 2 dorsal setae; endopod represented by 3 setae.

Maxilliped (Fig. 2f). Basis with a single seta; endopod 2-segmented with apical segment forming a slender claw bearing a spinule basally.

Leg 1 (Fig. 2g). Coxa with spinule row along outer margin; basis with proximal spinule row around a small anterior tubercle, a spinule row near base of endopod, another row near base of exopod and 2 setae, 1 located on outer margin proximal to the exopod and the other on the anterior surface near the inner margin. Exopod 1-segmented, although in some specimens an incipient subdivision is apparent, with 1 proximal and 2 distal setae on the outer margin, 1 short and 2 long setae on the distal margin and a distal spinule row. Endopod well developed; first segment long with spinules on proximal portion of inner margin, second segment with spinules on inner and outer edges; third segment forming a curved claw.

Legs 2-4 (Fig. 2h-j). Coxa unarmed; basis with an outer seta and a single spinule row on ventral surface between bases of rami. Exopod 3-segmented; first and second segments similar in length and longer than third; rows of spinules present on all exopod segments. Endopod 2-segmented; first segment larger, with minute spinules on lateral surface and longer hairs on inner surface; second segment of leg 2 with a conspicuous proximal spinule; endopod of leg 4 shorter, not reaching beyond end of second exopod segment. Spine and seta formula:

	EXOPOD			ENDOPOD		
	1	2	3	1	2	
Leg 2	0	1	2 1 2	0	2 2 0	
Leg 3	0	1	2 2 2	0	3 2 1	
Leg 4	0	1	2 2 2	0	2 2 1	

Spines and setae closely approximated and exact point of insertion on internal or distal margin sometimes difficult to discern.

Leg 5 (Fig. 3a). Baseoendopod longer than exopod; anterior surface with many rows of spinules; outer margin with a single seta, inner margin with 2 proximal spinules, 1 seta at the base of the endopod portion and a spine and a long seta distally; distal margin with 1 seta and 2 spines. Exopod with 4 spinules on anterior surface and with 6 setae around the outer and distal margins.

Ovisac with 6-10 eggs.

Body length of female ranging from 0.47 to 0.51 mm, with a mean of 0.49 mm.

ADULT MALE. Body more slender and shorter than female (Fig. 1d-f). Ornamentation of abdominal somites similar to female but with additional ventral spinule rows located anterior to the sensillae on the ante- and penultimate somites.

First antenna (Fig. 3d) 6-segmented, subchirocerate; aesthetasc present on fourth segment.

Legs 2 and 4 as in female but outer spines on exopod longer and more robust; inner seta on second exopod segment usually absent from leg 4. Leg 3 (Fig. 3c) with 3-segmented endopod; second segment with a mucroniform process at outer distal corner, third segment with 4 setae.

Leg 5 (Fig. 3e). Baseoendopod with a spinule row on inner margin, a long seta on outer margin and some scattered spinules located anterior and lateral to base of exopod; exopod broader than long, with a row of spinules, 1 seta at outer distal corner and 3 distal setae.

Leg 6. Each leg comprising a long outer seta and a short inner seta.

Mean body length 0.40 mm, with a range of 0.38 to 0.43 mm.

VARIATION. Ten specimens of each sex were dissected to examine possible variation in the armature of legs 2-4. No variation was found in the female. In the male the inner seta of exopod segment 2 was present on leg 2 in all 10 specimens, on leg 3 in 5 specimens and on leg 4 in only 2 specimens. No other variability was observed.

REMARKS

The new species is provisionally assigned to the genus *Microlaophonte* Vervoort, 1964 in the subfamily Laophontinae. There are marked differences between the new species and *M. spongicola* Vervoort, 1964, the type and only species of the genus, but these are not sufficient to justify the establishment of a new genus. However, *M. spongicola* is known only from the female (Vervoort, 1964) and the eventual discovery of the male may necessitate the removal of *M. trisetosa* from the genus if the male secondary sexual characters are found to differ significantly from those of *M. trisetosa*.

The spine and seta formula of legs 2-4 is of diagnostic importance at the generic level in the Laophontidae. The formulae of *M. spongicola* and *M. trisetosa* differ primarily in the presence of an additional internal seta on the second endopod segment of legs 2 and 3 in the latter species. However, the absence of the small innermost seta on this segment in *M. spongicola* may only be apparent as Vervoort (1964) states that small setae may have been obscured by the hairs on the endopod.

The two species can be readily separated by the presence in *M. trisetosa* of 3 setae on the exopod of the second antenna (the character alluded to in the specific name), of 6 setae on the exopod of leg 5 in the female and by the 1-segmented nature of the exopod of leg 1.

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